

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-14 (canceled)

Claim 15 (currently amended): A method of estimating the spreading factor of data in a channel in a spread spectrum radio communication system comprising a transmitter and a receiver, wherein the transmitter transmits a data unit at one of a plurality of spreading factors over a data channel and transmits in parallel over a control channel a control unit comprising information for decoding the data unit, the method comprising the steps of:

decoding an initial portion of the control unit;

decoding an initial portion of the data unit at an assumed one of the plurality of spreading factors; and

calculating ~~the~~ a received power of the decoded initial portions of the control unit and the decoded initial portion of the data unit to make an estimate of the spread factor used to transmit the data unit.

Claim 16 (previously presented): A method as in Claim 15, wherein data in the control unit and the data unit is interleaved over the duration of the respective units.

Claim 17 (previously presented): A method as in Claim 16, wherein the data unit comprises a single frame.

Claim 18 (previously presented): A method as in Claim 16, wherein the data unit comprises a plurality of frames.

Claim 19 (previously presented): A method as in Claim 15, wherein the assumed spreading factor is the lowest of the plurality of spreading factors.

Claim 20 (currently amended): A method as in Claim 15, wherein the estimate is calculated by matching the relationship between the received powers of the control unit and the data unit with a member of a set of possible power relationships known as-a priori, wherein each member of the set corresponds to one of the spreading factors.

Claim 21 (previously presented): A method as in Claim 15, after having made the estimate, a remainder of the data unit is decoded using the estimate of the spreading code.

Claim 22 (previously presented): A method as in Claim 15, wherein the data unit comprises data relating to a plurality of user services.

Claim 23 (currently amended): A method of estimating the spreading factor of data in a channel in a spread spectrum radio communication system comprising a transmitter and a receiver, wherein the transmitter transmits a data unit at one of a plurality of spreading factors over a data channel and transmits in parallel over a control channel a control unit comprising information for decoding the data unit,

the method comprising the steps of:

decoding an initial portion of the control unit;

decoding the whole of the data unit at an assumed one of the plurality of spreading factors; and

calculating ~~the~~ a received power of the decoded initial portions of the control unit and the decoded data unit to make an estimate of the spreading factor used to transmit the data unit.

Claim 24 (currently amended): A spread spectrum radio communication system, comprising:

a transmitter ~~which transmits~~ for transmitting a data unit at one of a plurality of spreading factors over a data channel and ~~transmits-for transmitting~~, in parallel over a control channel;

_____ a control unit comprising information for decoding the data unit; ~~and~~

a receiver comprising a decoder for decoding an initial portion of the control unit, a decoder for decoding an initial portion of the data unit at an assumed one of the plurality of spreading factors; and

means for calculating ~~the~~ a received power of the decoded initial portions of the control unit and the decoded initial portion of the data unit to make an estimate of the spreading factor used to transmit the data unit.

Claim 25 (cancelled).

Claim 26 (previously presented): A method as in Claim 16, wherein the assumed spreading factor is the lowest of the plurality of spreading factors.

Claim 27 (previously presented): A method as in Claim 17, wherein the assumed spreading factor is the lowest of the plurality of spreading factors.

Claim 28 (previously presented): A method as in Claim 18, wherein the assumed spreading factor is the lowest of the plurality of spreading factors.

Claim 29 (currently amended): A method as in Claim ~~26~~16, wherein the estimate is calculated by matching the relationship between the received powers of the control unit and the data unit with a member of a set of possible power relationships known *a priori*, wherein each member of the set corresponds to one of the spreading factors.

Claim 30 (previously presented): A method as in Claim 17, wherein the estimate is calculated by matching the relationship between the received powers of the control unit and the data unit with a member of a set of possible power relationships known *a priori*, wherein each member of the set corresponds to one of the spreading factors.

Claim 31 (previously presented): A method as in Claim 18, wherein the estimate is calculated by matching the relationship between the received powers of the control unit and the data unit with a member of a set of possible power relationships known *a priori*, wherein each member of the set corresponds to one of the spreading factors.

Claim 32 (previously presented): A method as in Claim 19, wherein the estimate is calculated by matching the relationship between the received powers of the control unit and the data unit with a member of a set of possible power relationships known *a priori*, wherein each member of the set corresponds to one of the spreading factors.

Claim 33 (cancelled).

Claim 34 (cancelled).

Claim 35 (new): A method as in claim 15, wherein the estimate of the spreading factor used to transmit the data unit is different from the assumed spreading factor used to decode the initial portion of the data unit.

Claim 36 (new): A method as in claim 15, wherein the information for decoding the data unit includes information indicating a data rate of the data unit, and the initial portion of the data unit is decoded at the assumed spreading factor before the information indicating the data rate of the data unit is decoded.

Claim 37 (new): A method as in claim 35, wherein the initial portion of the data unit is decoded at the assumed spreading factor, and, after the estimate of the spreading factor has been made, a remainder of the data unit is decoded at the estimated spreading factor.

Claim 38 (new): A method as in claim 15, wherein the transmitter is a transmitter of a base station and the receiver is a receiver of a mobile station.

Claim 39 (new): A spread spectrum radio communication system as in claim 24, wherein the transmitter is a transmitter of a base station and the receiver is a receiver of a mobile station.

Claim 40 (new): A mobile station for receiving a data unit transmitted by a base station over a data channel at one of a plurality of spreading factors and a control unit transmitted in parallel

over a control channel comprising information for decoding the data unit, the mobile station comprising:

a receiver comprising a decoder for decoding an initial portion of the control unit and a decoder for decoding an initial portion of a data unit at an assumed one of a plurality of spreading factors;

means for calculating a received power of the decoded initial portion of the control unit and the decoded initial portion of the data unit; and

means for estimating a spreading factor of the transmitted data unit using the calculated received power of the decoded initial portion of the control unit and the calculated received power of the decoded initial portion of the data unit.